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NUTRITION EDUCATION
K-6

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TABLE OF CONTENTS

	Page
Preface	1
Arrangement of the Guide	2
Kindergarten Learning Experiences	3
List of Supplies for Kindergarten Experiences	15
Grades 1 - 6 Learning Experiences	17
List of Supplies for Grades 1 - 6 Experiences	47
Appendix	50
Resource Materials	63

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Warner Bros. Publications, Inc.
75 Rockefeller Plaza
New York NY 10019

Field Enterprises Educational Corporation
"Childcraft", volume 11, 1954
101 Fifth Avenue
New York NY 10003

PREFACE

Nutrition education is the foundation of good health. The food children eat plays an important role in shaping their future. To attain good nutrition, children must be taught to make wise food selections and to apply this knowledge in everyday life. Learning what to eat and why is an essential part of children's mental, physical and emotional alertness.

Although, the home has the primary responsibility for the general health and well being of children, the school plays an important role in nutrition. To be effective, learning opportunities should be based on interests and needs of children.

Nutrition education takes place when children become actively involved in their own food needs and in the desire to improve their eating habits. Learning must be continuous from kindergarten into high school and through adult life.

The classroom teacher is the logical person to guide learning experiences of children in the elementary school. The teacher who believes in nutrition, realizes that what is expressed is more valuable than what is said in teaching young children about food.

Concepts of nutrition are not automatically learned by exposure, they become meaningful to children only when experience and knowledge are made realistic. Happy, pleasant encounters with food at school tend to influence children's food choices away from school. The Type A lunch served at school provides, at least, one-third of the Daily Dietary Allowances recommended by the National Research Council for Children. Consequently your school food service programs provide many opportunities for teaching the concepts of good nutrition. The purpose of the school food service programs is to provide nutritious meals and to create experiences with food which help to mold nutritionally desirable food habits.

The guidelines for this Nutrition Education K–6 guide were developed cooperatively by staff members of the Department of Health and Environmental Sciences (Health, Education and Maternal and Child Health Departments) and the Office of Public Instruction (Division of School Food Services and Home Economics Education). Leadership will be provided to schools by these two agencies to assist in developing comprehensive nutrition education programs.

Much of the material in this guide was adapted from "Nutrition Education - Guides" developed by the Nutrition Education Project and Model Neighborhood schools in Fargo, North Dakota, 1973.

ARRANGEMENT OF THE NUTRITION EDUCATION GUIDE

This Nutrition Education K–6 guide is designed for Montana's elementary teachers who desire to include nutrition education in other subject areas or as a unit by itself. The greater the degree that nutrition is included in a variety of subjects, the more learning experiences will be available for the students. Positive attitudes of the administrators and teachers will make the learning more effective.

This guide lists suggested learning experiences. It has been tested in Montana elementary and junior high schools for a few years. Revisions were based on teacher suggestions. Continual input from educators and school staff members is encouraged.

The Table of Contents lists the main sections. The basic layout of each section is (1) a broad general concept; (2) specific behavioral objectives; (3) teaching aids that answer the behavioral objectives and/or supply the teacher with additional information; (4) learning experiences that are relative to each behavioral objective and (5) possible subject areas in which the learning experiences can be included.

The List of Supplies section gives the instructor a brief overview of supplies that can be used for most of the learning experiences.

The Appendix includes samples of worksheets, game explanations, sketches and activity sheets that will aid the teacher in preparing for a learning experience.

The Resource Materials section includes addresses of sources for nutrition education items. Most commercial companies are charging for educational material.

KINDERGARTEN LEARNING EXPERIENCES

I. CONCEPT: Food has always been an important factor in the history of humans.

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
Verbally name two foods primitive people ate.		1a. Make a bulletin board showing primitive people, their food supply, how they ate and how they found their food.	Cultural Nutrition Social Studies - family life
Verbally list three grains eaten around the world.	1b. Supplies needed could include a large world map and plastic baggies or pill containers.	1b. Make a display of grains used around the world. A large world map could be the background. Have students bring as many types of grains and pictures of breads as possible. Identify each grain, the kind of food made from it and the area of the world in which it is grown and eaten.	Social Studies - family life, geography
Prepare and taste an unleavened bread.	1c. Let the students help prepare the food.	1c. If possible, make tortillas or other unleavened bread.	Cultural Nutrition Food Preparation School Food Service
Verbally list three occupations of student's parents.		1d. List on the chalkboard or make a bulletin board of the occupations of the student's parents. How many are engaged in food production?	Career Education Social Studies - family life
Name three foods we eat today that the Indians introduced to the colonists and pioneers.	1e. When the colonists arrived in the United States, the Indians demonstrated how to plant crops like squash, corn, beans, pumpkin, tomatoes and how to pick wild rice. They showed the colonists various edible berries and vegetables - gooseberries, blueberries, strawberries, cranberries, chokecherries, buffalo berries, huckleberries and rose hips. Some edible nuts were peanuts, cashews and peacans. Wild vegetables the Indians taught the pioneers to find were onions, carrots and turnips. The Indians taught the pioneers to prepare such foods as jerky from game animals, popcorn and cornbread.	1e. Study and taste three foods that we eat today that the Indians introduced to the colonists and pioneers.	Cultural Nutrition - Indian
		1f. Do three food preparations that the Indians taught the early settlers.	Cultural Nutrition - Indian Food Preparation.
		1g. Collect samples of food items native to the United States.	Cultural Nutrition - Indian
		1h. Have a resource person discuss foods the Indians contributed to the American diet.	Language Arts - Listening Cultural Nutrition - Indian
		1i. Start from seed some of the native foods of the United States.	Science - Biology
		1j. Make cornbread (recipe in appendix page 51).	Food Preparation

II. CONCEPT: Food is essential for life and is available from a variety of sources in many forms.

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
Verbally list three items plants and animals need for life.	2a. (A detailed explanation of this experiment is in most science series books.) First determine which is the control plant. a. Plant A is grown in soil, watered twice a week and kept in sunlight. b. Plant B is grown in soil, not watered and kept in sunlight. c. Plant C is grown in soil, watered twice a week and kept in the dark. d. Plant D is grown in distilled water or sand that was washed several times, watered twice a week and kept in the sunlight.	2a. Grow edible plants (radishes, lettuce, mung beans) with and without fertilizer (plant food). Compare the rates of growth and general health of the plants. Keep plants in the classroom.	Math Science - biology
		2b. Have students answer these questions. a. How does a plant acquire food? b. Can a plant live without water? Why not? c. Can a plant live without light? Why not? d. Can a plant live without soil? Why not?	Science - biology
	2c. Can animals live without food? Can animals live without water? Can they live longer without food or water? Are humans similar to animals in this respect? The activity "Is I a Plant or Animal?" can be ordered from National Dairy Council (address in resource materials section.)	2c. Play "Is It a Plant or Animal?" using food pictures or food models. A felt envelope is divided into "plant" and "animal" pockets using appropriate cutouts to designate each catagory. Students determine if the food in the picture is from a plant or animal. Then it is placed in the appropriate pocket. (This activity could be tried at the beginning and end of the lesson about plants and animals to demonstrate learning transfer.)	Science - biology
Verbally list parts of a plant essential for it to obtain food.	2d. Necessary for most plants to obtain food are roots, stem and leaves.	2d. Sketch on the chalkboard the parts of most plants necessary to obtain food. Bring a plant to class and examine the sections with the students.	Art Science - biology
		2e. Use a flannel board, make a bulletin board or have students draw different kinds of foods various animals eat. Use familiar animals as examples - horses eat grass, oats, hay; cats eat fish, milk, meat.	Art Science - biology

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
		2f. Tour a ranch, farm and/or feedlot to observe the foods animals eat.	Career Education Science - biology, environment
		2g. A student who has baby animals at home may provide a personal experience by talking about milk as a food for young animals.	Health - nutrition Language Arts - speech
		2h. Students can tell about the foods their pets eat.	Language Arts - speech
Verbally list a variety of foods people eat.	2i. Humans like and eat a great variety of food.	2i. Collect and display pictures of various foods eaten by humans - seeds, fruits, leaves, meat.	Cultural Nutrition - Indian Health - nutrition
		2j. Collect and display a sample of seeds, nuts and grains that are eaten by humans.	Art Science - biology

III. CONCEPT: **Food habits of an individual and family have evolved from complex geographic, demographic, sociologic, ecologic, economic, religious and cultural factors.**

BEHAVIORAL OBJECTIVE	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	3a. People's food habits in a country or region have evolved from complex demographic, social, economic and cultural factors. People usually do not think about the kinds of foods they eat. *Eating is a habit!* Humans become accustomed to eating certain foods. People in other parts of the world are used to eating different foods. These variations are due to many reasons: family, individuals, geographic location and culture. Food habits can change as we mature, through the influence of other forces on our behavior.	3a. Prepare or taste special American foods such as: a. Boston vs. Manhattan clam chowder b. Soul Food c. Mexican food d. Indian food e. Oriental food f. Italian food g. Spoon bread	Cultural Nutrition - Indian, U.S. School Food Service Social Studies
		3b. Students can prepare simple foods or the manager/cook can prepare the food for lunch so the students may experience them.	Cultural Nutrition Food Preparation School Food Service
		3c. Discuss: the influence of school lunch on student's food habits. Do students now eat any foods that they did not, before eating school lunch? Do they eat foods at school that they do not eat at home? Why?	School Food Service
		3d. Assist students in examining their individual eating patterns. Compare it with other family members and peers.	Cultural Nutrition Social Studies - family life
		3e. Compare rice dishes in various areas of the world through a taste party: a. Southeastern United States - rice or hopping John b. India - curry c. Sweden - rice pudding d. Iran - pilaf e. Mexico - rice with tomato sauce f. Greece - cabbage rolls g. China - chop suey h. Upper midwest United States - wild rice.	Cultural Nutrition Food Preparation Language Arts School Food Service
		3f. Have students or the manager/cook prepare a food from another culture. It may be for a class or be served on the lunch line with adequate publicity.	Cultural Nutrition Food Preparation School Food Service

BEHAVIORAL OBJECTIVE	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	3g. The booklet "Animals That Give People Milk" from National Dairy Council (address in resource materials section) gives references about animals around the world that produce milk. Teacher's guide has suggestions for student activities.	3g. Have students make a bulletin board of milk producing animals in other lands.	Art Cultural Nutrition Food Preparation Health - nutrition
		3h. Class could have a taste party featuring foods made with milk.	Food Preparation School Food Service
	3i. Use pictures from the portfolio "We All Like Milk" from National Dairy Council (address in resource materials section).	3i. Display prints in the picture portfolio "We All Like Milk".	Art
		3j. Take a field trip to a bakery, grocery store or restaurant that specializes in foreign food.	Cultural Nutrition Food Preparation

IV. CONCEPT: A variety of foods provide the essential nutrients for an adequate diet. Most foods can be classified according to the Basic 4 food groups.

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
Identify five foods by touch, sight, sound, smell and/or taste.	4a. Be sure to display each food in the original form.	4a. Students should experience various foods through the use of their senses.	Cultural Nutrition Health - nutrition
		4b. Students can make a booklet of drawings or cut out pictures to have as a record of foods encountered.	Art
Verbally name the foods used at the taste party.	4c. Conduct a taste party by presenting foods in bite size portions so they can be picked up with the fingers. Often a child will try a new food or eat a food that is disliked if others are tasting it. Teach the name of each food. Encourage all students to taste all samples. Do not force a student to eat a food or make an issue out of an expressed dislike. Check with the manager/cook to see if the kitchen can supply the food. Let the students prepare the foods! DIP for RAW VEGETABLES *250 ml / 1 C. cottage cheese* *90 ml / 3 oz. pkg. cream cheese* *30 ml / 2 T. milk* *5 ml / 1 t. grated onion* *1 ml / ¼ t. garlic salt* Blend cheeses and milk. Add other ingredients and mix. Makes: 360 ml / 1 2/3 cups.	4c. Have a taste, feel or smell party of foods from each Basic 4 food group or have a variety of foods from only one group.	Cultural Nutrition - Indian Health - nutrition
		4d. Combine an art activity with a taste party. Students can draw, sketch or paint the different foods and learn the names.	Art Cultural Nutrition - Indian Food Preparation
		4e. Suggested foods for a taste party: a. Fruits - apple (red, yellow), blueberry, cherry, coconut, date, fig, grapefruit, grapes (green, purple, red), Mandarin orange, melons (watermelon, cantaloupe, honey dew), nectarine, peach, pear, pineapple (fresh, canned), plum, prune, raisin, raspberry, strawberry, tangerine. b. Vegetables - avocado, beans (kidney, wax, pinto, green), cabbage, carrot, cauliflower, celery, cucumber, leafy greens (lettuce, kale, collards, spinach, dandelion), parsnip, peppers (red, green), radish, tomato, turnip, zucchini.	Cultural Nutrition - Indian Regional U.S., Foreign Food Preparation
Taste three foods new to each student.	4f. Ask the manager/cook to see if the kitchen can supply the food. Let the students participate in preparing the food.	4f. Have a fruit taste party. Discuss various fruits and types of seeds. Examine the seeds for size, shape, color, texture and quantity.	Cultural Nutrition Food Preparation Math - metric School Food Service

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	4g. Use films about cheese from Kraft and/or booklets relative to milk products from National Dairy Council (addresses in resource materials section).	4g. A taste party that features dairy products emphasizing foods produced from milk, i.e. cream, butter, buttermilk, cheese, cottage cheese, ice cream, milk and yogurt.	Career Education Food Preparation School Food Service Science
	4h. Ask the manager/cook to see if the kitchen can supply the food.	4h. Discuss and taste orange juice from various forms - fresh, frozen, canned, dehydrated, concentrated.	Career Education Food Preparation School Food Service
Verbally explain part of a processing procedure observed on the field trip.		4i. Arrange a field trip to: dairy, creamery, ice cream plant, retail grocery, produce farm, cafeteria, supermarket, food warehouse, bakery, butcher shop, ranch, school cafeteria or honey processing plant.	Career Education Cultural Nutrition Language Arts - speech School Food Service Social Studies
Identify the Basic 4 food groups available to people.	4j. The Basic 4 food groups offer a daily guide as to the kinds of food humans need to eat.	4j. Acquaint students with the Basic 4 food groups by using a daily food guide (address in resource materials section).	Cultural Nutrition Health - nutrition
	4k. Items can be ordered from Division of School Food Services, (address in resource materials section).	4k. Use a storybook, coloring book or these booklets "Dan and Sue Meet the Friendly Foods" or "The Good Foods Coloring Book" for a bulletin board.	Art Health - nutrition
	4l. Enlarge "Old Mother Hubbard" (sketch in appendix page 52) on cardboard and stand near shelves. Label each shelf with the name of a food group plus "other". Students can bring emplty cans or cartons or request some from the manager/cook, then put the containers on appropriate shelves.	4l. Use "Old Mother Hubbard" or any bulletin board idea which depicts the Basic 4 food groups. The nursery rhyme can be read.	Art Cultural Nutrition School Food Service
		4m. Cut out pictures of foods from magazines and place in a file, then students can sort them into the Basic 4 food groups.	
		4n. "Food Toss" - students toss food pictures or plastic food models onto an oilcloth or posterboard divided into four squares. Label each square with the name of a food group.	Health - nutrition, physical education
		4o. "Little Red Basket Toss" - a variation of "Food Toss" only each basket has a picture and name of a food group on it.	Health - nutrition, physical education

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
		4p. "Sorting the Basic 4" - students sort pictures from the Basic 4 food groups into pockets or sacks. A picture representing a food group is glued on the outside of each pocket or sack and labeled with the name of the food group.	Health - nutrition
	4q. Ask the manager/cook for some empty containers.	4q. "Food Treasure Hunt" - teacher hides food containers from each Basic 4 food group. Winner is the first person to find a container from each food group.	Cultural Nutrition - Indian Social Studies School Food Service
		4r. "Basic 4 Plus Other" - use oversized felt cutouts of a glass of milk, a meat, a fruit or vegetable, a slice of bread and a circle for other foods. Students place felt-backed pictures on the appropriate food group cutouts.	Health - nutrition
		4s. "Good Food Train" - make an engine and five cars from milk or packing cartons. Use colored paper to cover the cartons or pictures denoting each food group plus an extra. Name one car for each food group and one for other foods. Students place containers or food pictures in the appropriate car.	Art Health - nutrition School Food Service
		4t. Make a bulletin board or a collage of food pictures and nonfood products that go in the mouth - lipstick, mouthwash, toothbrush, toothpaste. Ask students to name the various items.	Art

V. CONCEPT: Nutrients in food are used for the production of energy, growth and development.

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
Verbally list three foods that help make healthy teeth and three foods that are detrimental to dental health.		5a. Invite a dentist, dental hygientist or nurse to discuss the relation of dental health and nutrition. The talk should include an explanation of how fluoride helps prevent cavities.	Health - nutrition Language Arts - listening
	5b. "How I Grow" tag from the National Dairy Council (address in resource materials section) can be purchased at a minimal cost.	5b. Have students keep a record of their height and weight at two week intervals. Students can make a chart recording growth progress or use "How I Grow" tag.	Health Math - charts Social Studies - family life
Compare a train's need for fuel with a human's need for food.	5c. Draw a parallel between fuel used by a train and food used by our body. a. input vs. output b. storage - no fuel means no movement so it stops, when humans do not eat they tire and die c. storage - fuel in humans is stored as fat while a train's is stored in a fuel tank	5c. Students form a line and become a train. What happens when the train runs out of fuel? Students stop. When it is refilled, they start again. Later repeat the activity only use students as the example. Summarize with pictures of children playing and those who appear tired. Ask: What should the tired children do? Show pictures of children eating.	Language Arts - speech Physical Education
Verbally list two reasons why people should eat in the morning.	5d. A morning meal should contribute 1/4 to 1/3 of the nutrients and joules (calories) needed for the day. As examples, these meals contribute significantly toward the nutritional and joule needs for a mornings' activities: a. tomato juice, cereal, milk b. orange juice dry cereal, milk c. toast, margarine milkshake made with fruit d. peanut butter sandwich, raisins, ice cream e. potatoes, bacon, enriched grape juice, milk f. orange, hot cereal, flour tortilla Use National Dairy Council materials (address in resource materials section).	5d. Have students tell or draw pictures of what they like to eat in the morning. 5e. Have students do breakfast charades. Students might yawn, eat, stretch, dress and brush their teeth. 5f. "What Did You Have for Breakfast This Morning?" materials illustrates that a variety of nutritious foods are acceptable for breakfast. An activity sheet reproduces the poster and provides space for menu planning. The teacher's guide details food customs of the countries of the children pictured.	Art Language Arts - speech Arts/Humanities - drama Health - physical education Art Cultural Nutrition Social Studies

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	5g. Many children are accustomed to three meals a day. Due to various schedules, inadequate family eating facilities and other reasons, some families may not sit down to a meal together. This does not necessarily result in poor nutrition, but may, if nutritious foods are not easily available to children who must fend for themselves. Emphasis on meals may not be relevant for these children. Instead stress eating nutritious foods at meals, for snacks and throughout the day as an effective approach for all children.	5g. Have students make a bulletin board or display on the subject "Food in the Morning". Perhaps the display could be shown at a parent-teacher meeting or a parents' night.	Art
		5h. Have students tell a story about their favorite food for: a. breakfast b. lunch c. dinner or supper d. snack	Language Arts - speech

VI. CONCEPT: Humans enjoy eating for social, psychological and sensory pleasures as well as for physiological functions to sustain life.

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
Verbally list two reasons why humans eat food other than for energy and growth.	6a. We all have favorite foods that give us pleasure because of their taste, feel, smell and/or appearance.	6a. Discuss: why we like our favorite food(s).	Language Arts - speech
		6b. List on the chalkboard or paper flip pad the class' favorite foods. Notice the variety of foods mentioned.	Language Arts - speech
	6c. Food means more to people than nourishment. It is associated with events, people, places, pleasant and unpleasant feelings. People use food for purposes other than nourishment like love, hospitality, concern, comfort and power. Food is used as an outlet for tension, conflict, guilt and loneliness. It is important to recognize that food serves these basic purposes. Non-nutritive uses of food may be appropriate or detrimental to health.	6c. Have a party for students whose birthday is in a particular month. This activity should be repeated monthly so all can participate. Ask the school food staff to prepare the refreshments.	Food Preparation School Food Service Social Studies - family life
		6d. Have a smelling party in which students try to identify onion, vanilla, pepper, lemon and orange extract, coffee, cloves, vinegar, cinnamon, peanut butter, molasses, chocolate syrup. Ask the manager/cook for samples.	School Food Service
Pictorially locate the areas of taste (sweet, sour, bitter, salty) on the tongue.	6e. Taste buds are located on the following places on the tongue: tip and sides halfway back - sweet; tip and sides - salty; back - bitter; sides - sour. Use small amounts of salt, sugar, lemon, grapefruit rind and nut shell lining. Put a piece of each on a toothpick.	6e. Discover by experiment how humans taste food. Which parts of the tongue taste sweet, sour, salty and bitter? Try to determine which part of the tongue tastes the flavor best. With a toothpick put bits of each food on different parts of the tongue. Students then draw a map of the tongue showing the location of different tastes.	Art Science - biology
	6f. Mealtime can be a family time. Why may depend on culture, family life patterns and the health of the members.	6f. Discuss: Is mealtime a period when families may or may not get together?	Cultural Nutrition Social Studies - family life
Name two holidays and a food commonly served at each.	6g. Traditional holidays involving food are Christmas, Easter, Passover, Thanksgiving, July 4th and Halloween.	6g. Discuss traditional holidays in which food has a part.	Cultural Nutrition - Indian Social Studies
		6h. Ask the manager/cook to prepare a menu emphasizing any of the particular holidays.	School Food Service

LIST of SUPPLIES for KINDERGARTEN LEARNING EXPERIENCES

LIST of SUPPLIES for KINDERGARTEN LEARNING EXPERIENCES

ACTIVITY NUMBER	SUPPLIES
1a.	Bulletin board
1b.	Large world map, baggies or pill containers
1c.	Tortilla recipe and food items
1d.	Chalkboard
1g.	Samples of native U.S. foods
1i.	Seeds of native U.S. foods
1j.	Cornbread recipe
2a.	Potting soil, seeds of quick growing vegetables
2c.	Pictures of foods or food models, magazines with food pictures
2e.	Flannel board
2g.	Pictures of baby animals
2i.	Pictures of foods in these categories: meat, seeds, fruits, leaves, dairy products
2j.	Samples of seeds, nuts and grains eaten by humans
3a.	Regional U.S. recipes
3e.	World-wide rice recipes
3g.	Pictures of animals around the world that produce milk, booklet - "Animals That Give People Milk"
3i.	Pictures - "We All Like Milk"
4b.	Magazines containing food pictures

ACTIVITY NUMBER	SUPPLIES
4e.	Food items - fresh fruits and vegetables, milk products, orange juice
4g.	Films or booklets about cheese from Kraft
4j.	Daily Food Guide
4k.	Booklets - "Dan and Sue Meet the Friendly Foods", "The Good Foods Coloring Book"
4l.	Book of nursery rhymes, empty food containers
4n.	Plastic food models, oilcloth or posterboard divided into four sections
4o.	Little baskets (can be made of colored paper, sacks or purchased)
4p.	Paper sacks
4q.	Empty food containers
4s.	Colored paper, milk cartons
4t.	Pictures of nonfood items that go in the mouth
5b.	"How I Grow" tag
5d.	Pictures of breakfast foods
5f.	"What Did I Have for Breakfast This Morning" materials
6d.	Samples of various spices
6e.	Samples of sweet, bitter, sour and salty foods
6g.	Pictures of foods served on various holidays

GRADES 1-6 LEARNING EXPERIENCES

I. CONCEPT: Food has always been an important factor in the history of humans.

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
Verbally list or write five factors involved in human progression from a food gatherer in prehistoric time to a food producer in modern time. Give an example of each.	1. As a food gatherer, prehistoric people ate fruits, vegetables and nuts that were found growing wild. They hunted meat. There was no knowledge of food storage or production, thus, people were often hungry.	1. Make a bulletin board or have students do drawings of primitive people, their food supply, how they ate and how they found their food.	Art Cultural Nutrition Social Studies - family life
		2. Discuss weapons and other methods primitive people devised to trap and kill animals for food.	Language Arts - speech
	3. The beginnings of agriculture can be traced to the Near East about 8000 B.C. This was after the Ice Age. Dry weather forced people to move to the lakes, rivers and by the sea. They discovered seeds dropped in the ground would yield a harvest several months later. At this point in history, people became food producers. The main crop was grain, as it could be stored, enabling people to have food during an unproductive season. At first grain was just eaten or roasted, then people began to make bread. The first bread was flat (unleavened). Grain and water were mixed and pounded to a pasty dough and cooked over a fire. The Egyptians, it is said, were the first people to make raised bread by letting bread dough sour or ferment before cooking. Factors involved in human progression as a food gatherer to a food producer are: a. tools - knife, wheel, plow, combine b. climate - Ice Age then drier weather c. fertilizers - manure, decayed matter, synthetic d. genetics - development of hybrid seeds and animals e. migration - movement from Tigris Euphrates River valley	3. Discuss what conditions existed before people could develop agriculture and produce food.	Social Studies - geography
		4. Make a display showing grains used around the world. A large world map could be the background. Have students bring as many types of grains and pictures of breads as possible. Identify each grain, the kind of food made from it and in general the area of the world in which it is grown and eaten.	Social Studies - geography, family life
		5. If possible, make tortillas, other unleavened bread or fry bread.	Cultural Nutrition Food Preparation School Food Service
		6. Discuss other grain foods people eat besides bread. Make a bulletin board with pictures of these foods.	Art Language Arts - speech
		7. Have students give oral reports about the grains they brought for the display.	Language Arts - speech
		8. Determine the nutritional content of various grains, then discuss the nutritional contribution grains make to the human diet.	Health - nutrition Language Arts - speech
		9. Read the booklet "Your Daily Bread and Its Dramatic History" from American Institute of Baking (address in resource materials section).	Language Arts - reading

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	10. During the Middle Ages hunger was common. Since there was little activity in science, music, art, literature, poor agriculture practices, plant destruction by insects, frequent wars and scarcity of food, many people starved.	10 Discuss whether the students think frequent famines during the Middle Ages were connected in any way to the lack of scientific and cultural activity. Why or why not? Why were agricultural practices poor?	Language Arts - speech Social Studies - government
	11. Inventions of machines such as the tractor, reaper and milking machine have increased the productivity of the farmer. Knowledge of soils, fertilizers and genetics have increased the amount a farmer can produce. One farmer now produces food for many other people.	11. Discuss: that if one farmer can produce enough food for 50 people, what occupations can the other 49 have?	Career Education Language Arts - speech
		12. Have a debate or write a report on the topic: "civilization depends on people's ability to produce food efficiently."	Language Arts - speech, writi Social Studies - geography, government
	13. In developing countries three-fourths or more of the labor force may be engaged in food production.	13. List on the chalkboard or make a bulletin board of the occupations of the student's parents. How many are engaged in food production?	Career Education Social Studies - family life
	14. When the colonists arrived in the United States, the Indians demonstrated how to plant crops like squash, corn, beans, pumpkin, tomatoes and how to pick wild rice. They showed the colonists various edible berries and vegetables - gooseberries, blueberries, strawberries, cranberries, chokecherries, buffalo berries, huckleberries and rose hips. Some edible nuts were peanuts, cashews and pecans. Wild vegetables the Indians taught the pioneers to find were carrots, turnips and onions. The Indians taught the pioneers to prepare such foods as jerky from game animals, popcorn and cornbread.	14. Identify three foods that we eat today that the Indians introduced to the colonists and pioneers.	Cultural Nutrition - Indian
		15. Name three food preparations that the Indians taught the early settlers.	Cultural Nutrition - Indian Food Preparation
		16. Collect samples of food items native to the United States.	Cultural Nutrition - Indian
		17. Have a resource person discuss foods the Indians contributed to the American diet.	Cultural Nutrition - Indian
		18. Plan a menu using pictures or drawings of foods used by the early settlers.	Art Cultural Nutrition - U.S.
		19. Start from seed some of the native foods of the United States.	Science - biology
		20. Make a cornbread (recipe in the appendix x page 51).	Food Preparation
		21. Compare what the Indians and Pilgrims ate for Thanksgiving with a typical Thanksgiving meal of today.	Cultural Nutrition - U.S. Social Studies - environment

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
		22. Research the history of food during the early settlement of the United States that involved the Indians. Identify the different foods eaten along the East coast and on the Western plains. Why was there a difference.?	Cultural Nutrition - U.S. Social Studies - geography

II. CONCEPT: Food is essential for life and is available from a variety of sources in many forms.

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
Verbally or write three elements needed by plants to grow.	23. Students should help design this experiment. A detailed explanation of this experiment is in most science series books. First determine which is the control plant. a. Plant A is grown in soil, watered twice a week and kept in sunlight. b. Plant B is grown in soil, not watered and kept in sunlight. c. Plant C is grown in soil, watered twice a week and kept in the dark. d. Plant D is grown in distilled water or sand that was washed several times, watered twice a week and kept in the sunlight.	23. Grow edible plants (radishes, lettuce, mung beans) with and without fertilizer (plant food). Compare the rates of growth and general health of the plants. Keep plants in the classroom. Compare the plants growth by graphing their progress with and without adequate materials for manufacturing food.	Math - graphing Science - biology
		24. Have students answer these questions: a. How does a plant acquire food? b. Can a plant live without water? Why not? c. Can a plant live without light? Why not? d. Can a plant live without soil? Why or why not?	Science - biology
	25. Can animals live without food? Can animals live without water? Can they live longer without food or water? Are humans similar to animals in this respect?	25. Play "Is It a Plant or Animal?" using food pictures or food models (National Dairy Council, address in resource materials section). A felt envelope is divided into "plant" and "animal" pockets using appropriate cutouts to designate each catagory. Students determine if the food in the picture is from a plant or animal. Then it is placed in the appropriate pocket. (This activity could be tried at the beginning and end of the activity about plants and animals to demonstrate learning transfer.)	Science - biology
List three parts of a plant essential for it to obtain food.	26. Parts of a plant necessary for it to obtain food are roots, stems and leaves.	26. Sketch on the chalkboard three parts of a plant necessary for it to obtain food. Bring a plant to class and examine the three parts with the students.	Art Science - biology
	27. Students can see the transport system within the plant.	27. Dye a celery stalk or carnation.	Science
Describe, verbally or with pictures, foods animals eat and how they acquire food.	28. Animals can be herbivorous (plant eating) or carnivorous (meat eating) or both. a. Familiar mature animals that eat only plants are horses, cows, sheep, deer, elk and squirrels.	28. Use a flannel board, make a bulletin board or have students draw different kinds of foods various animals eat. Use familiar animals as examples - horses eat grass, oats, hay; cats eat fish, meat, milk.	Art Science - biology

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
a. Name animals that eat plants. b. Name animals that eat meat, milk, insects and fish. c. Name animals that eat animals and plants.	b. Animals that eat meat, milk, insects or fish are birds of prey, lions, sharks, cats, dogs and insects (spiders). c. Mature animals that are herbivorouss and carnivorous are fish, chicken, beavers, humans and birds.	29. Tour a ranch, farm and/or feedlot to observe the foods animals eat.	Career Education Science - biology, environment
		30. A student who has baby animals at home may provide a personal experience by talking about milk as a food for young animals.	Health - nutrition Language Arts - speech
List on paper animals in each of the above categories.		31. Students can tell about the food their pets eat.	Language Arts - speech
List a variety of foods people eat.	32. Humans like and eat a great variety of food.	32. Collect and display pictures of various foods eaten by humans - seeds, fruits, leaves, meat.	Cultural Nutrition - Indian Health - nutrition
		33. View a film that shows the variety of food eaten by humans.	Cultural Nutrition Social Studies - geography
		34. Invite someone to discuss foods eaten by people who live in other areas of the United States or a foreign country.	Cultural Nutrition Language Arts - listening Social Studies
		35. Collect for display a sample of seeds, nuts and grains that are eaten by humans.	Art Science - biology

III. CONCEPT: Food habits of an individual and family have evolved from complex geographic, demographic, sociologic, ecologic, economic, religious and cultural factors.

BEHAVIORAL OBJECTIVE:	TEACHING AIDES:	LEARNING EXPERIENCES:	SUBJECT AREAS:
Discuss verbally or in writing an example of the factors that affect people's food habits: culture, religion, economic, ecologic, geographic and demographic.	36. People's food habits in a country or region have evolved from complex demographic, social, economic and cultural factors. People usually do not think about the kinds of foods they eat. *Eating is a habit!* Humans become used to eating certain foods. People in other parts of the world are used to eating different foods. These variations are due to many reasons: family, individuals, region and culture. Food habits can change as we mature through the influence of other forces on our behavior.	36. Study a fictional family devised by the teacher with the needs of the students and the nature of the community in mind. Consider: a. the foods each family member eats. Why? b. whether the foods each family member eats are the same or different. Why? c. whether the family eats foods similar or different than other families in the community. Why? d. whether the family eats foods similar or different from people in other countries. Why?	Cultural Nutrition - U.S., world Language Arts - listening, reading, speech, writing Social Studies - family life
	37. Foods people are used to eating. For example, most Americans would not like to eat insects, even if they are available and we know they will not harm us if we eat them. We are not used to eating insects, however, in some areas of the world insects are a food source.	37. Discuss the question, do all Americans eat the same foods? Why not? What differences exist among Americans in the food they eat? Are there any foods you think all Americans eat?	Cultural Nutrition - U.S. Language Arts - speech Social Studies - geography
	38. Food patterns in the United States are a complex mixture of foods which were here before the Europeans came and foods which were brought here by different groups of people.	38. Investigate special American foods such as: a. Boston vs. Manhattan clam chowder b. soul food c. Mexican food d. Indian food e. oriental food f. Italian food g. spoon bread	Cultural Nutrition - Indian, U.S. School Food Service Social Studies
		39. Small groups of students can research a particular food through the library or a resource person.	Cultural Nutrition Language Arts - writing
		40. Simple foods can be prepared so students may experience them. Perhaps parents will cooperate if elaborate dishes are to be prepared. Manager/cook may prepare it for lunch.	Cultural Nutrition Food Preparation School Food Service

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	41. *Customs and beliefs about food.* Sometimes we think a food is only for certain people, ie. coffee is thought of as a food for adults. In some areas of the world, milk is only consumed by children. Sometimes religious beliefs prohibit eating specific foods. People in all parts of the world have beliefs or superstitions about foods.	41. Evaluate some beliefs. Are they true? Do they have a remote basis in fact? Do they do any harm? How did they possibly originate? a. Fish is brain food. b. Orange juice and milk should not be eaten together. c. Garlic will purify the blood. d. Honey will cure some diseases. e. Grapefruit burns fat. f. Wheat germ gives vigor and vitality. g. Moslems are not to eat pork.	Social Studies - geography, history
	42. Elderly relatives or townspeople may be a good source of information.	42. Students can research beliefs and superstitions about foods in their environment.	Language Arts - writing Social Studies
	43. Most religions have a prayer or ritual for giving thanks for food.	43. Collect prayers from different religions. Make a bulletin board, a display or a series of posters from them.	Art Language Arts Social Studies
	44. Humans have developed beliefs about food and its power to influence life. Many religions incorporate food or rules about eating into their rituals and doctrine. Examples are: Hinduism - cow is sacred, killing a cow is a great sin, caste system in which the highest caste is vegetarian; Islam - eating pork is forbidden; Christianity - role of bread and wine in Mass and communion services; Judaism - prohibition of pork, shellfish, meat and milk together (Kosher concept), foods in the Seder service.	44. Small groups or individuals may select a religion and report on how food is used in the rituals or how the rules affect the food intake of the members.	Language Arts Social Studies
	45. *Availability of food.* People can eat only foods available to them, whether grown in their area or transported to their area. An example is a Chinese child eats rice because it is on the table and everyone else there eats it.	45. Discuss how a move from one part of the U.S. to another can effect a family's food habits. Some class members may relate such experiences.	Social Studies - family life geography
		46. Discuss the influence of school lunch on students food habits. Do students now eat any foods that they did not before eating school lunch? Do they eat foods at school that they do not eat at home?	School Food Service Social Studies - family life

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
		47. Identify foods that are available and/or less expensive in the summer than in the winter, ie. fresh strawberries, watermelon, fresh peaches.	
	48. *Preference.* People mainly select foods they like.	48. Have students examine their own eating pattern, compare it with other family members and compare it with peers.	Cultural Nutrition Social Studies - family life
	49. *Economic factor.* People can select only foods that they can afford to purchase.	49. Students can search for food advertisements on television, in magazines and in newspapers. Make a chart showing how many of the advertised products the students eat. Do they think the ads influenced them? Do the ads influence their parents? What do the ads really explain? How do the ads try to influence people?	Consumer Education Math - graphing
		50. Divide the class into groups. Assign each group several newspaper grocery ads and a specified amount of money. Each group should have a different amount of money to shop with for one day for a family of five or some other specified number. Each group reports to the class which foods they purchased.	Consumer Education Language Arts Math Social Studies - family life
Students will evaluate a day's food intake of a person from another culture, using the Basic 4 food groups as a guide for nutrient adequacy.		51. In a class in which several ethnic backgrounds are represented, study several families and note similarities and differences in food patterns.	Cultural Nutrition Social Studies - family life
		52. Cooperate with the school manager/cook and plan a lunch including foods from students ethnic backgrounds. Students, in small groups, can research which foods would be appropriate.	Cultural Nutrition School Food Service
	53. Foods eaten by the Indians were squash, corn, beans, pumpkin, wild rice, game animals and fowl, peanuts, pecans, cashews, berries, carrots, onions, turnips, fish and shellfish.	53. List foods the Indians ate prior to the Europeans arrival.	Cultural Nutrition - Indian
		54. List some foods now eaten in the United States which were brought from other countries.	Cultural Nutrition

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	55. Food can be part of a social studies report on a foreign county. The role of food should be studied broadly - the effect of the food supply on politics, economics and social life.	55. Select a country and discover what kinds of food the people eat.	Cultural Nutrition Social Studies
		56. Study foods in several areas of the world. Give a test in which the students circle three or four foods that do not belong in the diet of a specific country, ie. food that is unavailable or not eaten there.	Cultural Nutrition Social Studies
		57. Compare foods eaten in two countries which are geographically close together and two countries distant from each other. In which case is there similarity in the foods eaten? Why?	Cultural Nutrition Social Studies - geography
	58. Each student can research a foreign country or a region of the United States.	58. Pose a problem. If a student opened a food store in a foreign country or a region of the United States, which foods would be sold? Have each student research their area and give a report.	Consumer Education Cultural Nutrition Language Arts Social Studies - geography, government
		59. Compare rice dishes in various areas of the world through reports or a taste party: a. Southeastern United States - rice or Hopping John b. India - curry c. Sweden - rice pudding d. Iran - pilaf e. Mexico - rice with tomato sauce f. Greece - cabbage rolls g. China - chop suey h. Upper midwest United States - wild rice	Cultural Nutrition Food Preparation Language Arts School Food Service
	60. Ask a person from the community to assist with this project.	60. Have students or the school manager/cook prepare a food from another culture. It may be for a class or be served on the lunch line with adequate publicity.	Cultural Nutrition Food Preparation School Food Service
		61. Play Lingo (UNICEF address in resource materials section). The game helps students recognize foods by their English, French and Spanish names.	Cultural Nutrition Foreign Language

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	62. The booklet "Animals That Give People Milk" from National Dairy Council (address in resource materials section) gives references about animals around the world that produce milk. Teacher's guide has suggestions for student activities.	62. Have groups of students study milk producing animals in other lands. Tell about milk products from other areas of the world and of foods prepared with milk.	Cultural Nutrition Food Preparation Health - nutrition
		63. Class could have a taste party featuring foods made with milk.	Food Preparation School Food Service
		64. Display prints in the picture portfolio "We All Like Milk" from National Dairy Council (address in resource materials section).	Art
		65. Have students refer to the one day food records made earlier. Compare foods they eat with foods eaten in other countries.	Cultural Nutrition
		66. Take a field trip to a bakery, grocery store or restaurant that specializes in foreign food.	Cultural Nutrition Food Preparation

IV. CONCEPT: Humans need nutrients present in food. All nutrients required by the human body are available in foods.

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
Verbally, or in writing, list the six classes of nutrients necessary for health. Include the general functions of each class of nutrients.	67. No food alone can be a balanced diet which is needed for promotion of health and prevention of disease. Humans need a daily variety of foods to furnish needed nutrients. Each nutrient has specific uses in the body. Most nutrients are more effective when combined with other nutrients. All people require the same nutrients throughout life, but in varying quantities. The amounts of nutrients needed are determined by age, sex, build, activity and health. Kinds and amounts of nutrients needed by humans are suggested by scientists and are found in nutrient tables called Recommended Daily Dietary Allowances (RDA). RDA's for nutrients are established by the Food and Nutrition Board of the National Academy of Sciences, National Research Council. Nutrient amounts are updated every four or five years in view of new scientific information. Amounts of nutrients are suggested for specific age categories by sex. Since over 44 specific nutrients are needed by the body, nutrient recommendations are expressed in food guidelines which enable people to secure the nutrients from familiar food sources.	67. Have students list the food they ate yesterday. Identify the main nutrient that is in each food.	Health - nutrition
	68. Discuss the Food and Drug Administration's (FDA) nutrient labels on foods.		Language Arts - speech Health - nutrition
	69. Collect labels of prepared foods like breads, cereals, spaghetti, dry milk, salt and flour. List the food labels that mention 'enriched' and identify the added nutrient(s).		Health - nutrition
Verbally list five foods which supply large amounts of each of these six classes of nutrients.	Six classes of nutrients are protein, minerals, lipids, vitamins, carbohydrates and water.	70. Collect labels of prepared foods that give information in metric. Make a display.	Art

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	Protein. Protein (an organic substance) builds and repairs body tissue, regulates body processes and supplies energy. Enzymes (a substance that acts as a catalyst in metabolism) and hormones (a substance secreted by glands) are protein. Body proteins consist of some 20 amino acids (organic nitrogen compounds) of which eight are essential for humans. Essential means the body can not manufacture them, so they must be supplied by food. Foods of animal origin and some vegetable proteins (legumes) contain the eight essential amino acids. Only a portion of protein should be from animal sources. Combining plant proteins with milk or meat will improve the protein value of a meal.		
	71. *Minerals.* Minerals (an inorganic substance occurring in nature with a definite chemical compound and a definite structure) form about four percent of the body weight. Three-fourths of the mineral elements are calcium and phosphorus while the following five account for the rest - sodium, magnesium, chlorine, potassium and sulphur. Many elements present in minute amounts are referred to as trace elements or micronutrients which include: iron, zinc, copper, iodine, fluoride, cobalt and manganese. Food and Drug Board has tabulated daily dietary allowances for calcium, phosphorus, iron, magnesium and iodine. If allowances for these and other nutrients of the RDA are met, it is thought the remaining minerals will be present in adequate amounts. Mineral elements originate in soil and enter the structure of every body cell. Generally they help build the body structure and coordinate its processes.	71. What does calcium do in bone? Use a clean chicken bone, put it in a container and cover with vinegar, then leave it for several days. Examine it at intervals. In a few days the bone will be pliable and bend easily. a. What did the vinegar (acid) remove from the bone? Calcium. b. What does calcium do for bone? It makes it hard and keeps it from bending. c. Why did the entire bone not dissolve? It contains other elements besides calcium, like protein. d. Is there more than one type of cell in bone? Yes. Explain that the vinegar people eat does not have this effect, as human bones do not soak in foods that are eaten.	Science - biology
		72. Discuss: calcium accumulates in peoples bones throughout life. If the calcium intake is reduced, then, the accumulation may diminish.	Science - biology

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	Lipids (fats). Lipids (a solid or semisolid substance in animal tissue or plant seed and which is not soluble in water) provide energy, add flavor and variety to food, thus making meals more satisfying. Lipids carry vitamins A, D, E and K which are essential to the structure of cells that form the body's tissues. *Vitamins.* Vitamins (organic compounds) contribute to the growth and maintenance of the body and must be supplied by food. Twelve or more major vitamins have been identified with some having more than one form. They are vital in small amounts but too much can be harmful. A diet including recommended amounts of milk, fruits and vegetables, meat, breads and cereals (Basic 4 food groups) furnishes sufficient amounts of all vitamins, except vitamin D. For good health, all ages of individuals require an inclusive diet. Natural foods are a poor source of vitamin D so most fresh, dry and evaporated milk is fortified with it. Vitamins have two classifications - water soluble and lipid (fat) soluble. Lipid soluble vitamins (A, D, E and K) can be stored in the body's lipid deposits. Possible excesses of lipid soluble vitamins (A and D) can lead to vitamin toxicity, if too muchis consumed over an extended period. It can be experienced when vitamin pills in large doses are a daily addition to meals. Water soluble vitamins are generally not stored in the body and usually excesses are excreted. These vitamins include: thiamin, riboflavin, niacin, folacin, vitamin B_6, vitamin B_{12} and pantothenic acid. Ascorbic acid (vitamin C) is the only water soluble vitamin not related to the vitamin B complex.		

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	Dry cereals are enriched with B complex vitamins and many are fortified with vitamins A and C. These cereals are not substitutes for foods containing vitamins A and C like vegetables and fruits but they do make a contribution to the diet. *Carbohydrates.* Carbohydrates (compounds made of carbon, hydrogen and oxygen) are starches and sugars found in grains, fruits, vegetables and sugars. Grains and foods made from them provide starch and other important nutrients, as do these vegetables: potatoes, sweet potatoes, peas, dry beans, peanuts and soybeans. Many other vegetables contain smaller amounts of carbohydrates. Carbohydrates in vegetables are usually in the form of starches. In fruits they occur as sugar. Some foods primarily sugar are: candy, jam, molasses and syrups.		
	73. *Water.* Water (a transparent, oderless, tasteless liquid) is essential for life and is next to oxygen in importance. One-half to two-thirds of the body is made of water. All body tissues contain water, some more than others. Water is the medium of body fluids, secretions and excretions. It carries food materials from one part to another and serves as a solvent for all products of digestion. The body utilizes water from many sources: drinking water, soups, beverages, vegetables, fruits, dry cereals, meat and bread. Water is formed in the body when it uses food for energy.	73. Students can answer the question "how much of the human body is water?" One student can research the answer and report.	Science - biology
Experience three familiar foods and discuss the nutrient value of each.	74. Encourage students to taste and experiment with new foods. A choice made for any reason is acceptable. Personal taste is a valid reason for eating a food. Students should	74. Prepare a taste party.	Health - nutrition Food Preparation

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	realize more than taste is involved in selecting foods. Avoid instilling the attitude of two types of foods: 'those I like' and 'those that are good for me'.		

VI. CONCEPT: A variety of foods provide the essential nutrients for an adequate diet. Most foods can be classified according to the Basic 4 food groups.

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
Identify five foods by touch, sight, sound, smell and/or taste.	75. Be sure to display each food in its original form.	75. Students should experience various foods through the use of their senses.	Cultural Nutrition Health - nutrition
		76. Students can make a booklet of drawings or cut out pictures to have as a record of foods encountered.	Art
	77. Conduct a taste party by presenting foods in bite size portions so they can be picked up with the fingers. Often a child will try a new food or eat a food that is disliked if others are tasting it. Teach the name of each food. Encourage all students to taste all samples. Do not force a student to eat a food or make an issue out of an expressed dislike. Check with the manager/cook to see if the kitchen can supply the food. Let the students prepare the foods. DIP for RAW VEGETABLES *250 ml* / 1 cup cottage cheese *90 ml* / 3 oz. pkg. cream cheese *30 ml* / 2 T. milk *5 ml* / 1 t. grated onion *1 ml* / ¼ t. garlic salt Blend cheeses and milk. Add other ingredients and mix. Makes: *360 ml/* 1-2/3 cups.	77. Have a taste, feel or smell party of foods from each Basic 4 food group or have a variety of foods from only one group.	Cultural Nutrition - Indian Health - nutrition
		78. Combine an art activity with a taste party. Students can draw, sketch or paint the different foods and learn to spell the food names.	Art Cultural Nutrition - Indian Food Preparation
		79. Suggested foods for a taste party: a. Fruits - apple (red, yellow), blueberry, cherry, coconut, date, fig, grapefruit, grapes (green, purple, red), Mandarin orange, melons (watermelon, cantaloupe, honey dew), nectarine, peach, pear, pineapple (fresh, canned), plum, prune, raisin, raspberry, strawberry, tangerine. b. Vegetables - avocado, beans (kidney,wax, pinto, green), cabbage, carrot, cauliflower, celery, cucumber, leafy greens (lettuce, kale, collards, spinach, dandelion), parsnip, peppers (green and red), radish, tomato, turnip, zucchini.	Cultural Nutrition - Indian, regional U.S., foreign Food Preparation
Have students list foods they like in relation to texture, color, flavor, odor and shape.	80. Check with the manager/cook to see if the kitchen can supply the food. Let the students participate in preparing the food.	80. Have a vegetable taste party. Serve familiar and unfamiliar raw vegetables, ie. cauliflower, turnip, green pepper.	Cultural Nutrition - Indian Food Preparation School Food Service

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
		81. Have a fruit taste party. Discuss various fruits and types of seeds. Examine the seeds for size, shape, color and quantity.	Cultural Nutrition Food Preparation Math - metric Science-botany School Food Service
	82. Use films about cheese from Kraft and/or booklets relative to milk products from National Dairy Council (address in resource material section).	82. A taste party featuring milk emphasizes foods produced from milk, ie. cream, butter, buttermilk, cheese, cottage cheese, ice cream, milk and yogurt.	Career Education Cultural Nutrition Food Preparation School Food Service Science
	83. Check with the manager/cook to see if the kitchen can supply the food.	83. Discuss and illustrate various forms in which orange juice is available - fresh, frozen, canned, instant, dehydrated, concentrated.	Art Career Education School Food Service Social Studies
		84. Arrange a field trip to: a dairy, a creamery, an ice cream plant, a produce farm, a cafeteria, a retail grocery, a supermarket, a food warehouse, a bakery, a ranch, a butcher shop, school cafeteria or a honey processing plant.	Career Education Cultural Nutrition School Food Service Social Studies
Identify the Basic 4 food groups available to people.	85. The Basic 4 food groups offer a daily guide as to the kinds of food humans need to eat. a. *Milk* group contains milk and all foods made from milk (cheese, ice cream, buttermilk, chocolate milk, yogurt), except butter. It is important for the nutrients calcium and protein. b. *Bread and cereal* group contains all enriched and whole grain products (spaghetti, macaroni, bread, cereal, cornbread, rice, rolls, flour). It is important for the nutrients carbohydrates, iron and B vitamins. c. *Fruit and vegetable* group includes all fruits and vegetables. Nutrients important in this group are vitamins and minerals. Most people should eat a vitamin C food daily as it can not be stored. Vitamin A can be stored in the body, so a food containing a good source need only be eaten every other day.	85. Acquaint students with the Basic 4 food groups by using a daily food guide (addresses in resource materials section).	Cultural Nutrition Health - nutrition
		86. Have students draw, fingerpaint, paint, cut out pictures or use plastic food models of the Basic 4 food groups and extra foods. Have students then make a poster or collage.	Art
		87. Use as a story book, coloring book or for bulletin boards these booklets: "Dan and Sue Meet the Friendly Foods" or "The Good Foods Coloring Book" (order from Division of School Food Services, address in resource materials section).	Art Health - nutrition
		88. Discuss the effects cooking food has on its color, texture, flavor.	Language Arts - speech Science

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	d. *Meat* group contains meat, fish, poultry, eggs, nuts, beans and wild game. It is important for protein.		
	89. A joule (calorie) is a unit of heat. It is defined as the amount of heat required to raise the temperature of one gram of water one degree centigrade.	89. Discuss: a. How is food energy measured? Joules (calories) b. Does everyone need joules? Yes c. Does everyone need the same amount of joules? No d. Does a person who is growing need more joules, the same amount or less than a person who is not growing? More	Science - biology
		90. Use the filmstrip "How Food Becomes You" from the National Dairy Council (address in the resource materials section). It shows how food is used by the body.	
Verbally list or write some foods in each food group or successfully play any Basic 4 identifying game listed under learning experiences.	Students can make many of these games. This would give them another learning experience.	Games related to the Basic 4 food groups are:	
	91. Enlarge *"Old Mother Hubbard"* (sketch in appendix page 52) on cardboard and stand near shelves. Label each shelf with the name of a food group. Students can bring empty cans or cartons or request some from the manager/cook, then put containers on appropriate shelves.	91. *"Old Mother Hubbard"* or any bulletin board idea which depicts the Basic 4 food groups.	Art Cultural Nutrition Health - nutrition School Food Service
		92. Cut out pictures of foods from magazines and place in a file, then students can sort them into the Basic 4 food groups.	
		93. *"Food Baseball"* or *"Twenty Baseball"* - baseball shaped cards with pictures of foods (directions in appendix page 53).	Health - nutrition
		94. *"Food Toss"* - students toss food pictures or plastic food models onto an oilcloth or posterboard divided into four squares. Label each square with the name of a food group.	Health - nutrition, physical education
		95. *"Little Red Basket Toss"* - a variation of *"Food Toss"* only each basket has a picture and name of a food group on it.	Health - nutrition, physical education

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
		96. *"Sorting the Basic 4"* - students sort pictures from the Basic 4 food groups into pockets or sacks. A picture representing a food group is glued on the outside of each pocket or sack and labeled with the name of the food group.	Health - nutrition
		97. *"One of These Doesn't Belong"* - play music from Sesame Street entitled as above (sample in appendix page 54). Students place three pictures of food on a flannel board, using two from one food group and one from another. Then another student identifies the picture that does not belong. Repeat for other food groups.	Music
		98. *"Food Treasure Hunt"* - teacher hides food containers from each Basic 4 food group. Winner is the first to find a container from each food group.	Cultural Nutrition - Indian Social Studies
		99. *"What's Missing"* - distribute activity sheets (sample in appendix page 58). Students examine the sheets and decide which food group is missing. Draw a picture of a food from the missing group in the blank square.	Art
		100. *"Singing Game"* - use melody from the song 'Aiken Drum' (included in appendix page 57). Sing. Have students name the foods that are Aiken Drum's clothes. All sing the first verse. Teacher plays the phrase "and his name was Aiken Drum" with no singing. Teacher says 'milk group' and names a student. Phrase is repeated as student names a food from milk group. All sing second verse inserting the food the student has named. Thus, foods mentioned in the song are omitted. Continue all verses and select another food group for each new verse.	Health - nutrition Music

Experiences relating the Basic 4 food groups plus additional foods are:

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
		101. *"Basic 4 Plus Other"* - use oversized felt cut outs of a glass of milk, a meat, a fruit or vegetable, a slice of bread and a circle for other foods. Students place feltbacked pictures on the appropriate food group cut outs.	Health - nutrition
		102. *"Food Bingo"* - play like regular Bingo only food words or food pictures are used instead of numbers (order from Division of School Food Services, address in resource materials section).	Cultural Nutrition Foreign Language Social Studies
		103. *"Good Food Train"* - make an engine and five cars from milk or packing cartons. Use colored paper to cover the cartons or pictures denoting each food group plus an extra. Name one car for each food group and one for additional foods. Students place containers or food in the appropriate car.	Art Health - nutrition
		Other Basic 4 learning experiences are:	
		104. Make a bulletin board or a collage of food pictures and nonfood products that go in the mouth - lipstick, mouthwash, toothbrush, toothpaste. Ask students to indicate the various items.	Art
	105. A common food guide used in the United States for nutrient adequacy is the Basic 4 food groups. Specific quantities and types of foods are suggested for daily consumption.	105. Have students write a three day meal plan that provides an adequate intake of nutrients for a person of a particular age and sex by using a daily food guide.	Cultural Nutrition Health - nutrition Social Studies - family life
		106. Have students keep a three day record of their food intake. Then classify the food into four food groups and evaluate the intake as to nutrient adequacy.	Health - nutrition Science - biology Social Studies - family life, geography
		107. Explore with the manager/cook the possibility of a class to plan a one day school lunch or breakfast menu. Base the menu on the Basic 4. Ask the manager/cook to explain the requirements of a Type A school lunch.	Health - nutrition School Food Service

VII. CONCEPT: Nutrients become you by digestion, absorption and metabolism.

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
Describe, verbally or write, the digestive process by listing the parts and functions involved.		108. Determine the height and weight of each class participant. Ask the students to compare. Figure the class average. Is anyone average?	Cultural Nutrition Health - nutrition Math - metric Social Studies - family life
		109. Ask the students to bring family group pictures to class. Discuss the various size of family members.	Cultural Nutrition Health Social Studies
		110. Have the students guess how tall they will be as adults. Have them explain why.	Social Studies
List factors which cause individuals to be under or overweight.	111. Factors influencing weight include the amount of food eaten, exercise, emotional problems, social eating patterns and cultural ideal of the 'perfect' figure.	111. Discuss social situations which may lead to overeating.	Health Social Studies
		112. Discuss emotional feelings which may lead to overeating or undereating.	Health Social Studies
		113. Discuss the balance between food eaten and energy expended.	Health - nutrition Science - biology
		114. Discuss society's ideal of the 'perfect' body build for a man and/or woman and how this influences weight.	Health Social Studies
Describe the digestive process by listing the parts involved. Write a description of each function.	115. Digestion is the process of reducing food to small particles so it can be used by the body. Large food particles cannot be used without being changed into smaller particles. Booklet "How Your Body Uses Food" from National Dairy Council (address in resource materials section) describes the processes of digestion and metabolism for the upper intermediate grades.	115. Demonstrate the path food takes in the human gastrointestinal system on a large picture or flannel board representation.	Health - nutrition Science - biology
		116. Have students label each major part and spell the name correctly on a picture of the gastrointestinal system.	Health Science - biology

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	117. Parts and functions of the digestive system: a. *Mouth and esophagus* Mechanical Digestion means to bite, chew and transport food to the stomach. In Secretory Digestion the enzymes in saliva breakdown starch; lubricate mucous linings and bind food particles so they pass through the esophagus. b. *Stomach* Mechanical Digestion stores, mixes, slows and controls its emptying. In Secretory Digestion enzymes are secreted to partially breakdown protein and to some extent lipids (fat). c. *Small intestine* Mechanical Digestion helps food pass through the intestine by peristalsis (contractual movements). In Secretory Digestion enzymes are secreted to complete the breakdown of protein, lipids and carbohydrates. d. *Large intestine* It serves as a reservoir for undigestable material until defecation. Bacteria in it synthesizes vitamin K and some B vitamins.	117. Discuss the question "Do some types of cells keep reproducing at a rate necessary for growth even when growth in height has stopped?" Hair, fingernail.	Health Science - biology
List nutrients which are absorbed in the stomach, small intestine and large intestine by the bloodstream and circulated to all cells in the body.	118. After food is broken-down into nutrients in the digestive system, the nutrients are absorbed into the blood stream from various parts such as: a. stomach - small amount of water b. small intestine - end products of carbohydrate, fat and protein digestion c. large intestine - water, minerals and vitamins synthesized	118. Distribute a sheet with simplified drawings of a mouth, esophagus, stomach, small intestine and large intestine randomly arranged and unconnected. Have students cut out the pieces of the gastrointestinal system and place in order. Flannel board pieces can be used for the same activity.	Health - nutrition Science - biology
	119. Show that peristaltic action forces food along regardless of gravity by demonstrating that people can swallow uphill.	119. Have a student stand on their head with feet against a wall and drink water from a glass or use a straw. The liquid goes uphill.	Science

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
		120. Discuss the significance peristaltic action has for space travel.	Science - biology
	121. Starch particles are big enough to see. Sugar molecules dissolve in water because they are too small to see.	121. Grind a cracker into a powder and put *5 ml/*1 teaspoon of it into a glass of water. Put *5 ml/*1 teaspoon of sugar into another glass of water. Stir each with a separate spoon. a. Why is the starch water cloudy? b. Why is the sugar water clear?	Science
	122. Materials needed are cornstarch or flour, sugar, iodine,two spoons, two clear glasses or jars, three test tubes and a holder. Tincture of iodine is POISONOUS if taken internally! It will stain clothing. If old it will burn the skin.	122. Experiment by adding a few drops of iodine to the starch water. It will turn blue-black. This is a test for the presence of starch. Add iodine to the sugar water. It will remain tan colored, indicating that there is no starch present.	Science
	123. Discover how starch is brokendown by saliva.	123. To make a starch solution, add *5ml/*1 teaspoon of flour or cornstarch to *125 ml/*1/2 cup of water. Collect some saliva in another glass or container. Put *30 ml/*2 tablespoon starch solution in a test tube. In another tube, put *30 ml/*2 tablespoons of saliva and *30 ml/*2 tablespoons of the starch solution. In a third tube put only *30 ml/*2 tablespoons of saliva. Then put two or three drops of iodine in each tube. Tubes containing starch will turn blue-black. a. Why did the tube with only saliva not turn blue?	Science
		124. Let the tubes stand for several hours until the blue color in the saliva-starch-iodine mixture disappears. a. Why did the dolution change color? b. Is any starch present in the tube now? Why not? c. What has te starch been changed into?	Science

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	125. Discover that starch is changed to sugar in the mouth.	125. Have students chew a piece of cracker, but not swallow it for several minutes. a. What is noticed about the taste? It becomes sweet. b. What did the starch change to? c. What happened to the starch after it was eaten? d. Can the cracker be used by the cells in its original form? e. What must happen to the cracker before the cells can use it?	Science
Verbally or write two examples of metabolism using nutrients that have been absorbed and carried to the cells.	126. In the cells food substances combine with oxygen to give energy. Energy is used to keep the body warm; to keep the heart beating, lungs breathing and other vital parts functioning; to supply energy for movement, work, play and build more cells. Examples are: a. body cells change nutrients into energy b. body cells change nutrients into building material for growth and to repair and replace damaged, old or worn-out cells.	126. Show that food burns and supplies heat energy (joules/calories) by holding with tongs a piece of food in a candle or Bunsen burner flame. By trying several kinds of foods, it will be noted that foods with high fat content (peanut, piece of bacon) burn longer than other foods (candy or bread).	Science

VIII. CONCEPT: Nutrients in food are used for the production of energy, growth and development.

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
Verbally list three nutrients which furnish energy for work, play and body functions. List two sources of each nutrient. Verbally describe how the body uses food for energy.	127. All living things need food for energy and humans require a constant and reliable source. Energy categories are proteins, carbohydrates and lipids that provide the energy necessary for growth, maintenance and body activity. Food energy is measured in joules (calories).	127. Have students make a list of all foods they think contain protein, lipids and carbohydrates. Conduct tests for these substances on foods which students bring from home. As tests are made, revise the list. Gradually the idea emerges that many foods contain these substances.	Health - nutrition
	128. Ask the manager/cook for a sample of these foods.	128. *Test for starch:* Place a drop or two of iodine on the food, i.e., potato, apple, bread, spaghetti, corn, beans and squash. If starch is present there will be a blue-black spot.	Science School Food Service
	129. Lipids are in butter, salad oils, margarine, shortening, cream, most cheeses, mayonnaise, salad dressing, nuts, egg yolk, egg white, lunch meat and peanut butter. Ask the manager/cook for a sample of these foods.	129. *In a test for lipids:* Chop or mash a food sample, then rub a small bit on a piece of brown paper or paper bag. Heat the paper with the food sample over a light bulb. Lipids are present, if a grease stain is left.	Science School Food Service
	130. As the manager/cook for a sample of these foods.	130. *Test for protein:* Use a candle or Bunsen burner and burn a feather. This odor is characteristic of protein, so test cheese, meat, dry skim milk powder, beans, egg white, peanuts, lunch meat, butter, mayonnaise and sugar.	Science School Food Service
		131. On a chalkboard or flip pad which is divided into the Basic 4 food groups (milk, meat, fruit/vegetable and bread/cereal) have students rank each group as to whether it is good, fair or poor source of carbohydrates, protein or lipids.	Health - nutrition
		132. Write food names on pieces of paper and put in a container. Have students sort them into the three energy categories. Use duplicate slips for foods in more than one category.	Health - nutrition

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
Verbally list or write the specific nutrients needed for each of these: bones and teeth, gums, blood cells, thyroid gland, cells, skin and eyes. List two sources of each nutrient.	133. These body parts need similar nutrients but also need a specific nutrient.	133. Students can acquire information about the diets of people in areas of the United States or a foreign country.	Health - nutrition
	134. Have students tell what foods would be substituted for familiar ones to supply specific nutrients, ie. which foods provide vitamin C if fruits are not available.		Health - nutrition Science
List five foods that help make healthy teeth and five foods that are detrimental to dental health.		135. Invite a dentist or nurse to discuss dental health and nutrition. Ask them to include an explanation of how fluoride helps in preventing cavities.	Health - nutrition Language Arts - listening
Identify a factor, other than nutrition, which will determine human growth.	136. A factor, heredity, causes each of us to be a unique individual in our height and weight pattern. Adequate nutrition enables us to reach our inherited potential for height.	136. Invite a school or public health nurse to talk about growth and development. Suggest that instruments used for measuring height, weight and corresponding charts be brought.	Health - nutrition Language Arts - listening
	137. Use the film "Fuel for Life" from the state Division of School Food Services office (address in resource materials section).	137. Discuss: Do all children of the same age have the same build? Are all adults the same? If not, why?	Cultural Nutrition Health Language Arts - speech Social Studies
	138. "How I Grow" tag from the National Dairy Council (address in resource materials section) at a minimal cost.	138. Have students keep a record of their height and weight at two week intervals. Students can make a chart recording growth progress of use "How I Grow" tag.	Health Math Social Studies - family life
	139. A body can not buy new cells. It must make its own. It uses food to make new cells.	139. Construct a make-believe person using styrofoam blocks held together with toothpicks or make a bulletin board display with units of colored paper (compare the units to cells.)	Art Health

Body Part	Specific Nutrient	Food Source
gums	vitamin C	fruits/ vegetables
bones/teeth	phosphorus calcium	milk group
blood cells	protein iron	meat group
eyes, skin	vitamin A	fruits/ vegetables
all cells	variety of nutrients	Basic 4 food groups plus others

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	Additional cells for the make-believe person can be acquired from the storeroom or made.	Discuss: what happens when there are no more "new cells" for the make-believe person.	
Compare a car's need for gas with a human's need for food in three or more ways.	140. Draw a parallel between gas used as a car's fuel and food used as fuel for our body. Possible similarities are: a. input vs. output b. storage - no gas in a car means no movement so it stops, when humans do not eat they tire and die c. storage - fuel is kept in a car's gas tank and fuel in humans is stored as fat	140. Students form a line and become a train. What happens when the train runs out of fuel? Students stop. When it is refilled, they start again. Later repeat the activity except use the example of the students. Summarize with pictures of children playing and those who appear tired. Ask: what should the tired children do? Show pictures of children eating.	Language Arts - speech Physical Education
		141. Distribute a handout sheet which has two pictures - a child running and a child who is tired. Students should circle the picture of the child who had enough to eat and discuss why.	Art Language Arts - speech
Verbally describe three or more examples of the importance of breakfast after no food intake during the night and the importance of food intake during the day.	142. "Food in the Morning" implies that traditional breakfast patterns need not limit the choice of foods eaten. Many children do not eat a traditional breakfast of bacon and eggs or milk and cereal. It is important that people have something to eat in the morning. "Breakfast" implies a rigid food pattern to many people. Some children if asked what they ate for breakfast may reply 'nothing' when they did eat something. If it was leftover meat or rice, they may not think of it as breakfast.	142. Compare humans with a clock that must be wound. It will run for hours but eventually will run down and must be wound again. If wound before it runs down, it works better and does not stop.	Language Arts - speech
		143. Figure how many hours pass between the last food eaten at night and morning. Emphasize that like a clock which runs down, humans run out of energy and need to be refueled after so long a time.	Health - nutrition Math
	Child Nutrition Act of 1966 provides a School Breakfast Program for students in schools that apply. If your school participates, it can provide an opportunity for teaching the need and importance of food in the morning.	144. Have students tell or draw pictures of what they like to eat in the morning.	Art Language Arts - speech
		145. Have students record what they eat in the morning for a few days. Evaluate the breakfasts in relation to nutrients, Basic 4 food groups and/or joules (calories).	Cultural Nutrition Health - nutrition Math - charts
	146. A morning meal should contribute 1/4 to 1/3 of the nutrients and joules (calories) needed for the day. For example, these meals contribute significantly toward the nutritional and joule needs for a mornings activities:	146. Have the students do breakfast charades. Students might yawn, stretch, dress, eat and brush their teeth.	Arts/Humanities - drama Health - physical education

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
	a. tomato juice, cereal, milk b. orange juice, dry cereal, milk c. toast, margarine, milkshake made with fruit d. peanut butter sandwich, raisins, ice cream e. potatoes, bacon, enriched grape juice, milk f. orange, hot cereal, flour tortilla		
	147. Many children are accoustomed to three meals a day. Due to various schedules, inadequate family eating facilities and other reasons, some families may not sit down to a meal together. This does not necessarily result in poor nutrition, but may, if nutritious foods are not easily available to children who must fend for themselves. Emphasis on meals may not be relevant for these children. Instead stress eating nutritious foods at meals, for snacks and throughout the day as an effective approach for all children.	147. Use National Dairy Council materials "What Did You Have for Breakfast this Morning?" (address in resource material section). These materials illustrate that a variety of nutritious foods are acceptable for breakfast. An activity sheet reproduces the poster and provides space for menu planning. Teacher's guide details food customs of the countries of the children pictured.	Art Cultural Nutrition Social Studies
		148. Have students make a bulletin board or display on the subject "Food in the Morning". Perhaps the display could be shown at a parent-teacher meeting or a parents night.	Art
		149. Have students tell a story about their favorite food for: a. breakfast b. lunch c. dinner or supper d. snack	Language Arts - speech
		150. If your school has school food service programs, take advantage of the opportunity to teach about food with coordinated learning experiences. Study the menu a week in advance to learn about new foods being offered before they are encountered in the serving line.	Cultural Nutrition School Food Service Social Studies

IX. CONCEPT: Humans enjoy eating for social, psychological and sensory pleasures as well as for physiological functions to sustain life.

BEHAVIORAL OBJECTIVE:	TEACHING AIDS:	LEARNING EXPERIENCES:	SUBJECT AREAS:
List, verbally or write, four reasons why humans eat food other than for energy and growth.	151. We all have favorite foods that give us pleasure because of their taste, feel, smell and/or appearance.	151. Discuss why we like our favorite food(s).	Language Arts - speech
		152. List on the chalkboard or paper flip pad the class's favorite foods. Notice the variety of foods mentioned.	Language Arts - speech
	153. Foods means more to people than nourishment. It is associated with events, people, places, pleasant and unpleasant feelings. People use food for purposes other than nourishment like love, hospitality, concern, comfort and power. Food is used as an outlet for tension, conflict, guilt and loneliness. It is important to recognize that food serves these basic purposes. Non-nutritive uses of food may be appropriate or detrimental to health.	153. Have a birthday party for students whose birthday is in a particular month. This activity should be repeated monthly so all can participate. Ask the school food staff to prepare the refreshments.	Food Preparation School Food Service Social Studies - family life
		154. Have a smelling party in which students try to identify onion, vanilla, pepper, lemon and orange extract, coffee, cloves, vinegar, cinnamon, peanut butter, molasses and chocolate syrup. Ask the manager/cook for samples.	School Food Service
	155. Taste buds are located in the following places on the tongue: tip and sides halfway back - sweet; tip and sides - salt; back - bitter; sides - sour. Use small amounts of salt, sugar, lemon, grapefruit rind and nut shell lining. Put a piece of each on a toothpick.	155. Discover by experiment how humans taste. Which parts of the tongue taste sweet,salty, sour and bitter? Try to determine which part of the tongue tastes the flavor best. With a toothpick put bits of each food on different parts of the tongue. Students then draw a map of the tongue showing the location of different tastes.	Art Science - biology
	156. Mealtime can be a family time. Why may depend on culture, family life patterns and the health of the members.	156. Discuss mealtime as a period when families may or may not get together.	Cultural Nutrition Social Studies - family life
	157. Traditional holidays involving food are Christmas, Easter, Passover, Thanksgiving, July 4th and Halloween.	157. Discuss holidays in which food is traditionally a part.	Cultural Nutrition - Indian Social Studies
		158. Ask the manager/cook to prepare a menu emphasizing any of the particular holidays.	School Food Service

LIST of SUPPLIES for GRADES 1-6 LEARNING EXPERIENCES

ACTIVITY NUMBER	SUPPLIES
4.	Sample of grains eaten around the world
5.	Tortilla recipe and food items
9.	Booklet - "Your Daily Bread and Its Dramatic History"
16.	Samples of food items native to the U.S.
18.	Pictures or drawings of foods used by early settlers
19.	Seeds of some native U.S. foods
20.	Cornbread recipe and food items
23.	Seeds of quickly sprouting plants
25.	Pictures of foods or food models, pictures of animals
32.	Pictures of foods in these categories (seeds, fruits, leaves, meat) eaten by humans
35.	Samples of seeds, nuts and grains eaten by humans
38.	Recipes of regional U.S. foods
39.	Prayers of thanks from various religions
49.	Food advertisements from television, newspapers, magazines, radio
59.	Rice recipes from around the world
61.	Lingo game
64.	Prints in portfolio "We All Like Milk"
69.	Labels of prepared foods
70.	Labels in metric of prepared foods
71.	Chicken bone, vinegar, container
83.	Orange juice in various forms

ACTIVITY NUMBER	SUPPLIES
85.	Basic 4 food guide
87.	Booklets - "Dan and Sue Meet the Friendly Foods", "The Good Foods Coloring Book"
90.	Filmstrip - "How Food Becomes You"
92.	Magazines containing food pictures
94.	Pictures of food or food models, oilcloth or posterboard divided into quarters
97.	Music from Sesame Street "One of These Doesn't Belong"
98.	Empty food containers from each Basic 4 food group
99.	"What's Missing" activity sheets
100.	Music for the song "Aiken Drum"
101.	Felt cut outs representing each Basic 4 food group
102.	"Food Bingo" game
103.	Milk cartons, basic art supplies
104.	Food pictures, nonfood products that go in the mouth
109.	Student's family group pictures
118.	Activity sheet showing parts of the digestive system
121.	Cracker, sugar, water, measuring spoon, two glasses
122.	Iodine
123.	Flour or cornstarch, water, three test tubes, iodine
125.	Cracker
126.	Candle or Bunsen burner, tongs, food items - peanut, bacon, candy, bread

LIST of SUPPLIES for GRADES 1 - 6
LEARNING EXPERIENCES

ACTIVITY NUMBER	SUPPLIES
128.	Iodine, potato, apple, bread, spaghetti, corn, beans, squash
129.	Above listed food items, brown paper, light bulb
130.	Candle or Bunsen burner, feather, food items - cheese, meat, dry skim milk, beans, egg white, peanuts, lunch meat, butter, mayonnaise, sugar
138.	"How I Grow" tag
139.	Styrofoam blocks and tooth picks or colored paper
141.	Handout showing a tired and an active child
147.	Materials "What Did You Have for Breakfast this Morning?"
155.	Samples of foods that are bitter, sweet, sour, salty

APPENDIX

CORNBREAD

Ingredients:	
All purpose flour	946 ml/ 4 c.
Cornmeal	750 ml/ 3 c
Baking powder	63 ml/ ¼c.
Nonfat dry milk	125 ml/ ½ c.
Sugar	166 ml/ 2/3c.
Salt	10 ml/ 2 t.
Eggs	6
Water	625 ml/ 2½ c.
Oil	166 ml/ 2/3 c.

Directions:

Mix all dry ingredients well. Beat the eggs in a separate container. Add water and oil to eggs. Combine egg mixture and dry ingredients. Stir just enough to moisten. Pour into a 23 cm x 30.5 cm/ 9" x 13" pan. Bake at 218° C. /425° F. for 20 minutes.

CORNMEAL COOKIES

Margarine	188 ml/ ¼ c.
Sugar	188 ml/ ¼ c.
Egg	1
All purpose flour	275 ml/ 1½ c.
Cornmeal	125 ml/ ½ c.
Baking powder	5 ml/ 1 t.
Salt	1 ml/ ¼ t.
Vanilla	5 ml/ 1 t.
Raisins (optional)	125 ml/ ½ c.

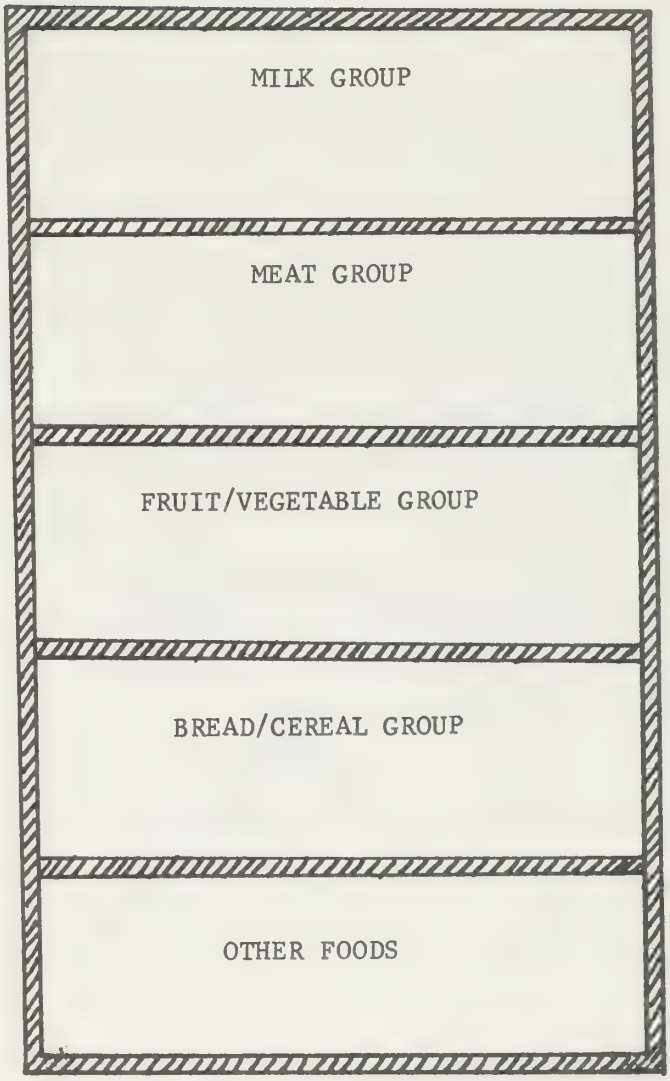
In a large bowl mix margarine and sugar. Add the egg and beat. Add the rest of the ingredients and mix well. Use a teaspoon and drop dough on a greased baking pan. Bake at 176 °C/ 350°F for 15 minutes. Makes 36 cookies approximately.

CORNMEAL MUFFINS

Use the recipe for cornbread. Fill greased muffin pans one half full of the cornbread mixture. Bake at 218°C/425°F for 15 to 20 minutes. Makes 12 muffins.

OLD MOTHER HUBBARD

Old Mother Hubbard
Choose from the cupboard
Foods from each shelf every day,
Each one to help feed a bodily need
Building vigor for work and for play.



Place cartons and containers from each group on the appropriate shelf.

HOW TO CONSTRUCT "FOOD BASEBALL" OR "TWENTY BASEBALL"

Form a baseball diamond on a bulletin board by stretching yarn into a diamond shape. Pin the yarn into position at first, second, third and home base. Label each base "1", "2", "3" and "home" (Figure 1). Cut 20 circles (four inches in diameter) from white posterboard. Use a felt tip pen to draw lines representing stitching on a baseball, then glue a picture of a food from one Basic 4 food group in the middle of each baseball. Cover with transparent plastic adhesive or laminate. Punch a hole in the top of each baseball so it can be hooked on a pin on the bulletin board (Figure 2).

For kindergarten and primary grades familiar foods should be pictured on the baseball cards. For other grades include some new and unusual foods. Pictures of most casseroles are not appropriate.

Figure 1

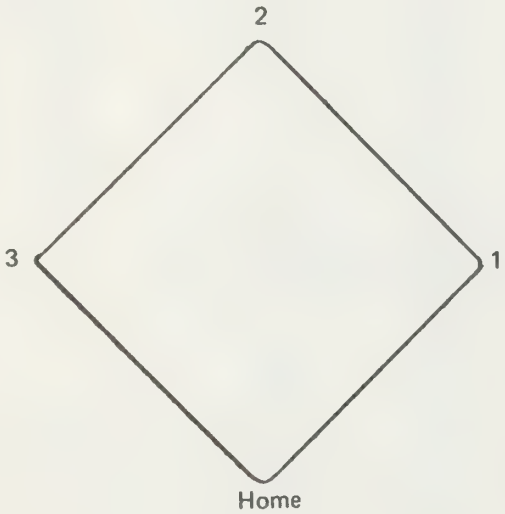
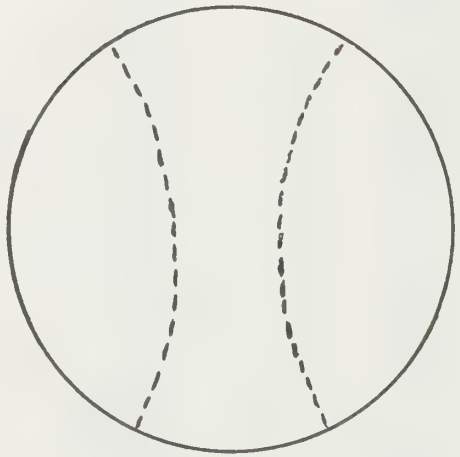


Figure 2



DIRECTIONS FOR PLAYING "FOOD BASEBALL" OR "TWENTY BASEBALL"

Divide the class into two teams. One team is "up to bat" and the other team is "in the field". Give each student a position on the team.

Shuffle the 20 baseball picture cards and place them picture side down in a pile. The "pitcher" draws a card and shows the picture to the class. The person "up to bat" must identify which food group the picture on the card belongs in. If that person is unable to identify the food group on the first guess, they are out and the next player is "up to bat". If the second batter cannot identify the food group, then they are out. When three players are not able to identify the food group, the other team is "up to bat".

When a player identifies the food group correctly, the card is hooked over the pin on first base. If the next player identifies the food group on another card correctly, the baseball card on first is moved to second base and the card belonging to the second player is hooked over the pin on first base. Each player gets to move their own card.

Continue the game according to regular baseball rules, except the batter gets only one "strike" (one chance to identify the food group) instead of three.

The team able to identify the most food groups, thus obtaining the most home runs, is the winner.

ONE OF THESE THINGS

Words and Music by
JOE RAPOSO

Moderately, with a steady motion

Eb Edim Fm7 Bb7 Eb Edim Fm7 Bb7

mp

Eb Bb7

One of these {things / sounds} is not like the oth - ers,

one of these {things / sounds} just does - n't be - long. Can you

Eb

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Edim Fm Fm7

tell which {thing / sound} is not like the oth - ers by the

Eb Bb7 Eb

time I fin - ish my song?

{Hum and show different objects. / Hum and demonstrate different sounds.

Bb7 Eb

Eb7 Ab6 Fm7 Eb Bb7

Eb Bb7

Did you guess { this thing / which sound } is not like the oth-ers? Did you

guess { this thing / which sound } just does - n't be - long? If you

Eb

guessed this { thing / sound } is not like the oth - ers, then you're

Eb7 Ab6 Fm7

ab - so - lute - ly right. right.

Eb Eb7 1. Eb 2. Eb

Aiken Drum

1. There was a man lived in the moon, lived in the moon, lived
2. And his hat was made of good cream cheese, of good cream cheese, of
3. And his coat was made of good roast beef, of good roast beef, of

in the moon, There was a man lived in the moon,
good cream cheese, And his hat was made of good cream cheese, } And his
good roast beef, And his coat was made of good roast beef,

name was Ai-ken Drum, And he played up-on a la - dle, a la - dle, a

la - dle, And he played up-on a la - dle, And his name was Ai-ken Drum.

4. And his buttons were made of penny loaves,
   And his name, etc.
5. His waistcoat was made of crust of pies,
   And his name, etc.
6. His breeches were made of haggis bags,
   And his name, etc.

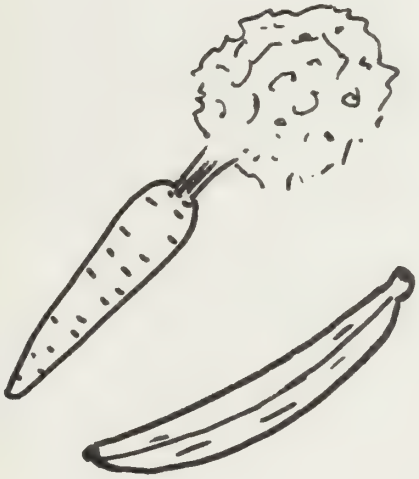
From *The Baby's Bouquet* by Walter Crane. Frederick Warne & Co., Inc. Reprinted from *Childcraft*, vol.11, 1954, Field Enterprises Educational Corporation.

WHAT'S MISSING ?

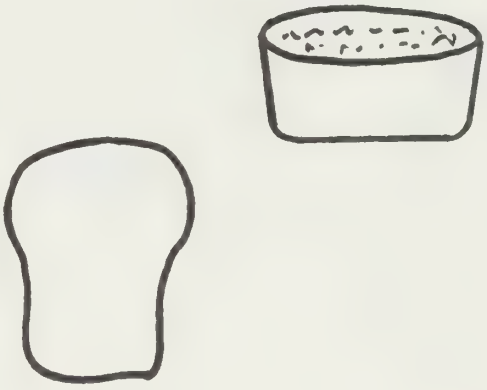
Print the name of a different Basic 4 food group in each box. Next draw a picture of a food from that food group in each box.

WHAT'S MISSING ?

MEAT



FRUIT/VEGETABLE

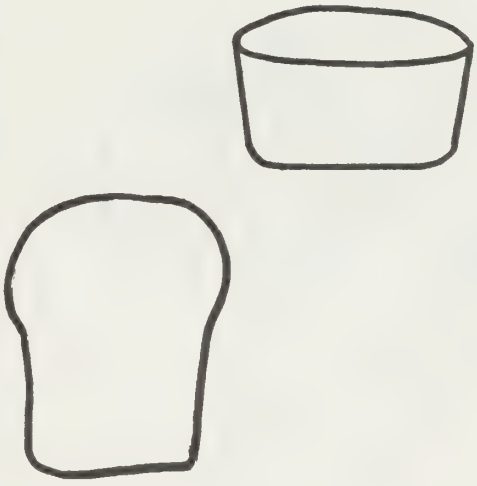


BREAD/CEREAL

WHAT'S MISSING ?

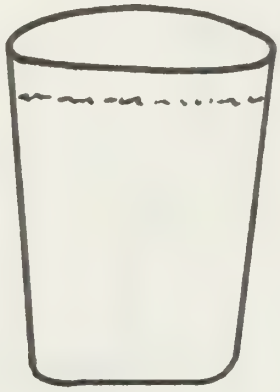
FRUIT/VEGETABLE

MILK



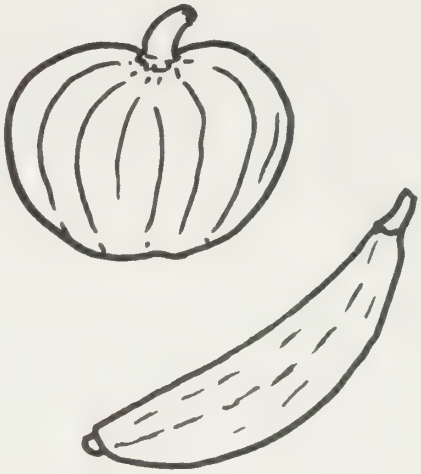
BREAD/CEREAL

WHAT'S MISSING ?



MILK

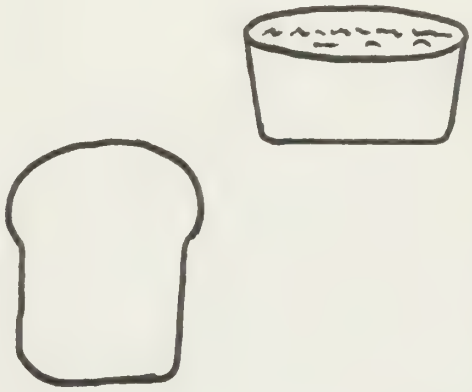
MEAT



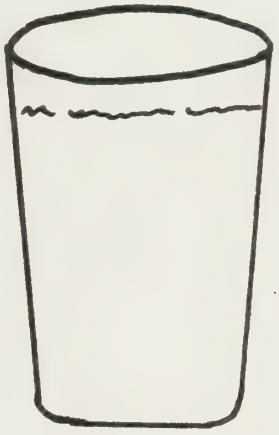
FRUIT/VEGETABLE

WHAT'S MISSING ?

MEAT



BREAD/CEREAL



MILK

RESOURCE MATERIALS

RESOURCE MATERIALS

American Home Economics Association
1600 - 20th Street, NW
Washington, DC 20009

American Institute of Baking
400 East Ontario Street
Chicago, IL 60611

Cereal Institute, Inc.
135 South LaSalle Street
Chicago, IL 60603

Checkerboard Kitchens
Consumer Services
Checkerboard Square
Dept. 209
St. Louis, MO 63188
(Basic 4 and other information)

Cling Peach Advisory Board
One California Street
San Francisco, CA 94111
(lesson plans)

Consumer Information
Public Documents Distribution Center
Pueblo, CO 81009
(USDA publications)

Del Monte
Box 4031
Clinton, IA 52734
(Basic 4 chart and other information)

Division of School Food Services
Office of Public Instruction
State Capitol
Helena, MT 59601
(Nutrition education information)

Florida Citrus Commission
Lakeland, FL 33802
(All types nutrition information)

Green Giant Company
Le Sueur, MN 56058

Kansas Wheat Commission
1021 North Main Street
Hutchinson, KA 67501
(Wheat related recipes and information)

Kellogg Company
Dept. of Home Economics Services
Battle Creek, MI 49016

Kraft
Youth Education, Inc.
10 East 40th Street
New York, NY 10016
(Cheese related information)

National Dairy Council
6300 North River Road
Rosemont, IL 60018
(All types nutrition information)

National Livestock and Meat Board
Department of Nutrition
36 South Wabash Avenue
Chicago, IL 60603

National Nutrition Education Clearing House
2140 Shattuck Avenue, Suite 1110
Berkeley, CA 94704
(For Society for Nutrition Education)

Nutrition Today Society
101 Ridgely Avenue
P.O. Box 465
Annapolis, MD 21404
(Request nutrition catalog)

Sunkist Growers, Inc.
Dept. 11601
Box 78888
Van Nuys, CA 91409
(All types nutrition information)

U.S. Committee for UNICEF
331 East 38th Street
New York, NY 10016
(Lingo game)

Wheat Flour Institute
14 East Jackson Boulevard
Chicago, IL 60604